

1. NEED AND PURPOSE FOR ACTION

1.1. INTRODUCTION

Development, operation, and management of Columbia River Basin Federal **hydroelectric**¹ facilities have had far-reaching effects on many species of fish and wildlife within the basin. The Bonneville Power Administration (BPA) is responsible for protecting, **mitigating**, and enhancing these affected species and their **habitats** (see Pacific Northwest Electric Power Planning and Conservation Act of 1980 [Northwest Power Act]², 16 U.S.C. 839 et seq., Section 4 (h)(10)(A)). Additionally, under the **Endangered Species Act** of 1973 (ESA) as amended, 16 U.S.C. 1531 et seq., BPA shares responsibility for protecting and conserving **listed threatened and endangered species**.

One measure that may help mitigate for the loss of **anadromous fish populations** is the Idaho Department of Fish and Game (IDFG) Captive Rearing Initiative for Salmon River Chinook Salmon Program (IDFG Program). The proposed **captive rearing** initiative is a research program designed to assist the **recovery** of Salmon River spring/summer³ chinook salmon. By extension, the IDFG Program may contribute to the overall health of the Snake River spring/summer chinook salmon Evolutionarily Significant Unit (ESU)⁴.

This Environmental Assessment (EA) analyzes alternatives for achieving IDFG Program goals and objectives.

1.2. NEED FOR ACTION

In 1995, the IDFG applied for an emergency permit from the National Marine Fisheries Service (NMFS) to recover Salmon River spring/summer chinook salmon. In particular,

¹ Words highlighted in **boldface** appear in the glossary at the end of this document. Some explanation or definition may appear in footnotes as well.

² Under the Northwest Power Act, mitigation refers to varying measures such as: a) not taking a certain action or parts of an action, b) limiting the degree or magnitude of an action and its implementation, c) repairing, rehabilitating, or restoring the affected environment, d) preservation and maintenance operations during the life of the action, and/or e) replacing or providing substitute resources or environments.

³ Spring and summer chinook are considered together in the Snake River Basin Evolutionarily Significant Unit because there is overlap in the spawning areas between the two groups, as well as overlap in run-timing (NMFS 1999).

⁴ *Evolutionarily Significant Unit* (ESU) is an Endangered Species Act (ESA) designation that groups local populations of fish in an area into a larger group. The grouping is based on similar ranges, genetic make up, and life histories. The local populations that make up the ESU are known as *subpopulations* of the ESU. The ESU is the *metapopulation* that is made up of the *subpopulations*. The extent of the similarity among subpopulations, and the relationship of each population to the health of the ESU, is a topic of debate. However, the ESU designation assumes that the groups are so related; and it assumes that they are more closely related to one another within the ESU than they are related to groups outside of the ESU. Finally, the designation assumes that the ESU is significant to the survival of the species as a whole, and should be preserved. The designation exists to help program managers target population recovery efforts efficiently. Of the 38 identified subpopulations that make up the Snake River spring/summer chinook salmon ESU, 28 are in the Salmon River drainage (NMFS 1995).

they identified high-priority⁵ at-risk populations in the East Fork Salmon River, West Fork Yankee Fork Salmon River, and Lemhi River.

By funding ongoing IDFG Program activities, BPA addresses its need to mitigate for losses of anadromous fish and fish habitat due to operation of the hydrosystem. The IDFG Program presents the opportunity to monitor, evaluate, and refine captive rearing and **propagation** tools, as required under the Northwest Power Planning Council's (Council) Fish and Wildlife Plan. Relevant measures of the Fish and Wildlife Program include 7.4d.1, which calls for **scoping** to identify captive **broodstock** research needs; 7.4d.2, which calls for funding captive broodstock **demonstration programs**, and 7.4e, which authorizes **cryopreservation** of **gametes** from depleted stocks (freezing or "banking" gametes).

1.3. PURPOSES (DECISION FACTORS)

BPA identifies the following purposes for participating in this project. These purposes define the decision factors on which BPA decides among alternatives.

1.3.1. Technical Factors

- The Proposed Action is consistent with the Council's 1987 Fish and Wildlife Program, and 1995 Program Amendments.
- The Proposed Action complements activities of fish and wildlife agencies and appropriate tribes.
- The Proposed Action is consistent with the legal rights of the appropriate tribes in the region.
- The Proposed Action develops and transfers information/technology.

1.3.2. Economic Factors

- The Proposed Action is administratively efficient and cost-effective.

1.3.3. Environmental Factors

- The Proposed Action avoids or minimizes adverse environmental impacts.
- The Proposed Action has the best potential to achieve biological objectives, including:
 1. **supplementation** of **natural spawning populations** of Salmon River spring/summer chinook salmon in target streams; and
 2. preservation of unique **genetic** heritage of target populations.

⁵ *High-priority* is defined as having an annual escapement of less than 20 fish, poor resiliency from the last bottleneck (1979 through 1984), and adequate habitat for successful spawning and rearing in case of recovery. Populations for hatchery preservation actions are prioritized based on assumed relative importance to the Snake River spring/summer chinook salmon ESU, assumed retention of native population characteristics, estimated imminent extirpation risk, and risk of exposure to experimental techniques (Fleming and Gross 1992, 1993; Joyce, Martin and Thrower 1993; Flagg and Mahnken 1995).

1.4. RELATED DOCUMENTS

- IDFG. 1999. The IDFG Snake River Chinook Salmon Captive Rearing Program. 1998 Annual Report (BPA project #s 9700100 and 9801002). Boise, Idaho.
- IDFG. 2000. The IDFG Captive Rearing Initiative for Salmon River Chinook Salmon. IDFG Annual Report #99-03 (BPA project #s 9700100 and 9801002). Boise, Idaho.
- Bowles, E., and E. Leitzinger. 1991. Salmon Artificial Rearing Studies in Idaho Rivers (Idaho Artificial Rearing Studies), Experimental Design. U.S. Department of Energy/BPA. Project No. 89-098. Contract No. DE-B179-89BP01466. Portland, Oregon.
- Integrated Hatchery Operations Team (IHOT). 1995. Policies and Procedures from Columbia River Basin Anadromous Salmonid Hatcheries. BPA Report 92-043. Portland, Oregon.

The IDFG documents report IDFG Program results for Fiscal Years 1998 and 1999. Bowles and Leitzinger detail the IDFG Program research plan used for monitoring and evaluating artificial rearing. The IHOT (1995) document details IDFG Program rearing procedures.

1.5. RELATIONSHIP TO OTHER PROJECTS

- The IDFG Program operates in association with the BPA-funded (Lower Snake River Compensation Plan) Sawtooth Fish Hatchery in Stanley, Idaho. The Sawtooth Fish Hatchery would act as the initial rearing facility for IDFG Program fish.
- Eagle Fish Hatchery - a facility presently in use to develop sockeye salmon captive broodstocks—would be the site of IDFG Program freshwater captive rearing. Although managed as separate projects, program responsibilities overlap and complement each other.
- Saltwater captive rearing would be carried out at the NMFS Manchester Marine Experimental Station site. The Manchester Marine Experimental Station would also be an integral component of the overall IDFG Program cooperative fish **culture** activities conducted by NMFS.
- NMFS provides guidance for the refinement and use of captive propagation technology for Pacific salmon. It also brings together information on fish husbandry techniques, genetic risks, **physiology**, nutrition, and pathology affecting captive stocks. Finally, NMFS conducts genetic investigations of Idaho and regional salmon populations. This provides essential genetic baseline information to the IDFG Program on target subpopulations.

1.6. DECISIONS TO BE MADE

BPA Decision: In compliance with the Northwest Power Act, the Council recommends fish and wildlife projects to BPA for funding. BPA reviews the Council's recommendations for impacts to the environment (human and biological) in an EA. If the information in the EA indicates that the project will not cause significant impacts, BPA issues a Finding of No Significant Impact (FONSI). If, on the other hand, the

information indicates that there would be significant impacts to the environment—or that significant scientific uncertainty surrounds the information in the EA—BPA initiates further study and reporting through the Environmental Impact Statement (EIS) process. Thus:

- BPA must decide whether the IDFG Program meets its fish and wildlife policy needs and internal contracting requirements sufficiently to continue funding.
- BPA must decide whether information developed for this EA is sufficient to issue a FONSI, or whether the information indicates the need for an EIS.

IDFG Decision: Should BPA not issue a FONSI based on this EA, the IDFG must decide whether to continue the Proposed Action as written through alternate funding sources, modify the Proposed Action for further review, or withdraw the Proposed Action from further consideration.

Council Decision: The Council requires that each artificial **production** project go through a 3-Step Review Process. Step 2 of the process requires, among other things, that project managers document potential impacts to the environment. Such documentation—usually an EA or an EIS—complies with the requirements of the **National Environmental Policy Act (NEPA)**.

The Council must decide whether this EA satisfies its Step 2 NEPA compliance requirements.

1.7. THE ORGANIZATION OF THE ENVIRONMENTAL ASSESSMENT

Chapter 1 states the purpose and need for the IDFG Program, and defines the factors that determine whether BPA will participate.

Chapter 2 describes the Proposed Action and reasonable alternatives, including a No Action Alternative.

Chapter 3 details human and environmental resources that will be analyzed (or not analyzed) for impacts from the alternatives. This chapter then describes the resources as they currently exist in the project areas.

Chapter 4 analyzes expected short-term, long-term, and cumulative impacts of the alternatives to the resources.

Chapter 5 is a table describing potential mitigation for IDFG Program measures.

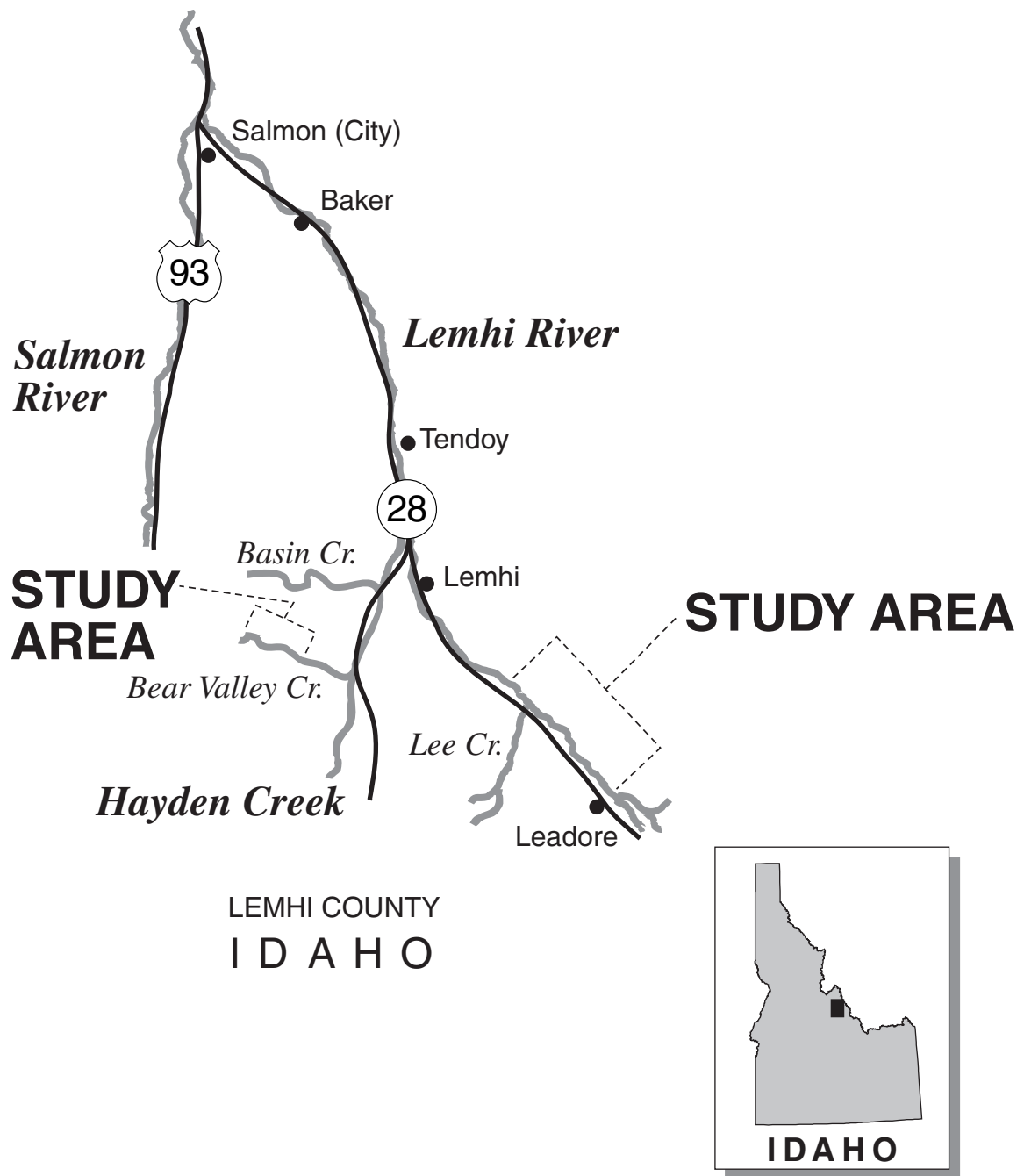


Figure 1-1. Map of Lemhi River Project Area

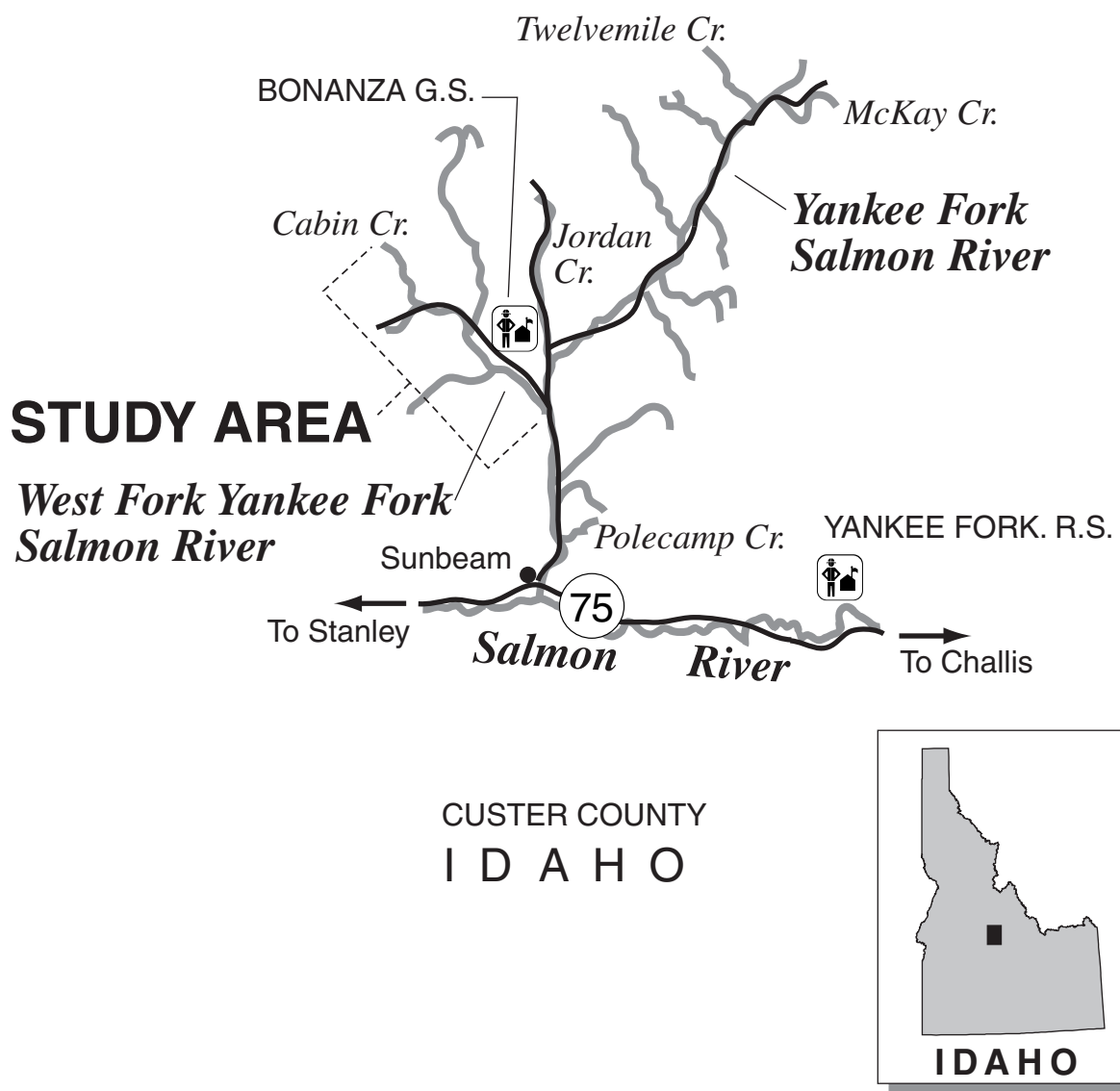


Figure 1-2. Map of West Fork Yankee Fork Salmon River Project Area

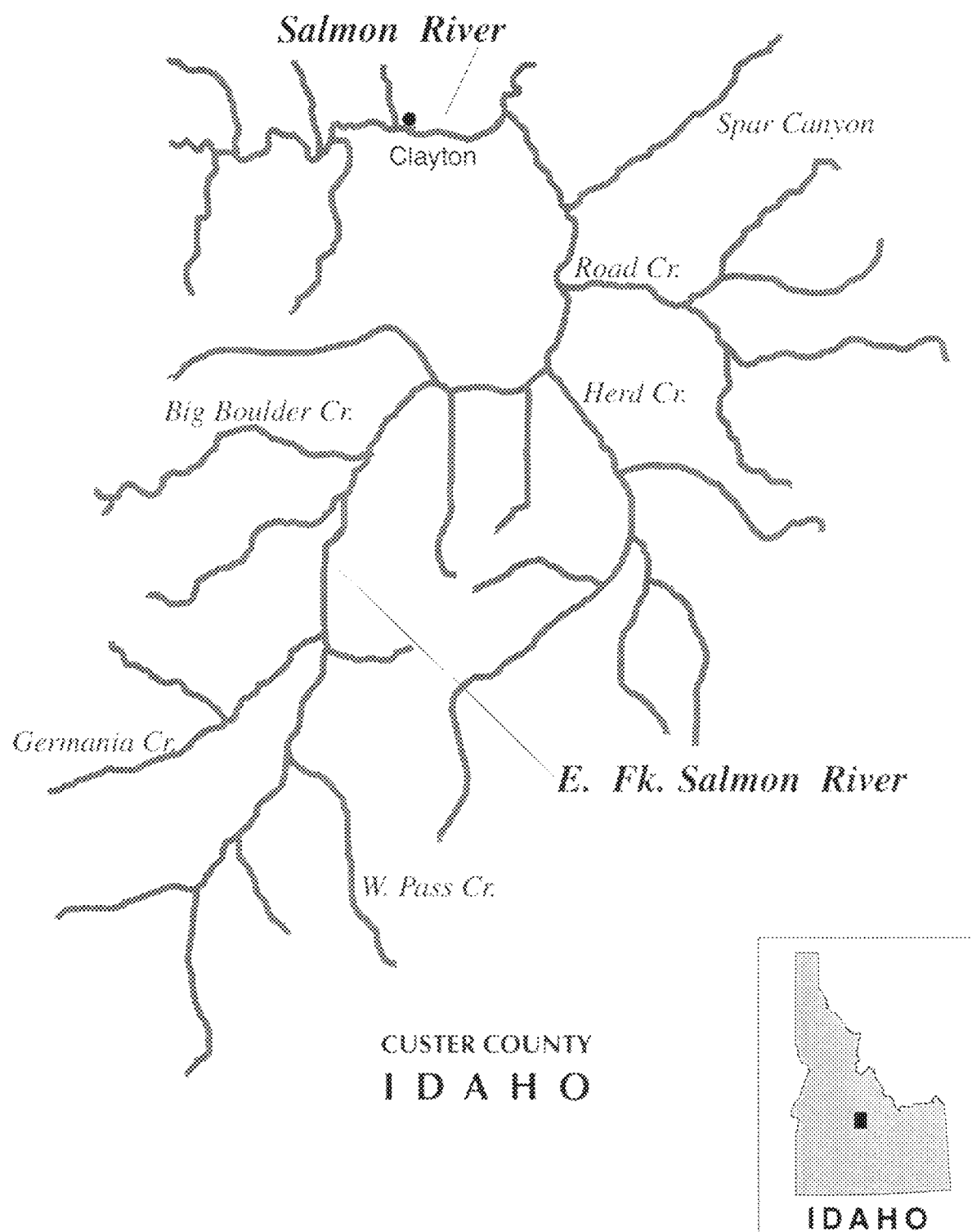


Figure 1-3. Map of East Fork Salmon River Project Area